

December 26, 1967

Dr. Per Dalén
Psychiatric Research Centre
Göteborg University
St. Jörgen Hospital
Lillhagen, Sweden

Dear Dr. Dalen:

I am happy to have the comments of your letter of October 18, and the subsequent reprints relating to seasonality of birth and schizophrenia.

There are extensive statistics connecting season of birth with maternal age in the vital statistics of the United States. In the data I have reviewed I do not see any drastic shift in the main trends with age, but the intensity of the seasonal fluctuation seems to diminish with births to older women. Unfortunately, we have no analyses with a sufficient data base in which variables like maternal age, parity, socio-economic status, and ethnic and geographic diversity have been independently sorted out. So I am afraid that maternal age is going to be confounded with many other variables.

I have in hand a report written by F. H. Godley of the Division of Vital Statistics, National Center for Health Statistics, Public Health Service, of the United States on "Fertility and Educational Attainment - Puerto Rico, 1962". These data show that the secular trend towards a peak incidence of births in September has been much more rapid for higher educational classes. You may be also acquainted with the work of Dr. Ursula Cowgill of Yale University on similar trends in Puerto Rico. (She has published in the Proceedings of the National Academy of Sciences, United States, November, 1964) Again there are many variables confounded here.

I was astonished at the congruence of the curves for total live births in Figure 2 of the materials you sent me with that for rural live births in Figure 4. Is this correct, or a mislabeling? May I also ask whether the total population of Sweden for the appropriate interval has a proportion of rural births corresponding to the 10,791/16,238 among your schizophrenics?

There must be important secular changes with time in the seasonality of births in Sweden as there have been in many other countries. In the presentation of the material it would be helpful if a curve could be given for adjustment for age specificity of the live birth distribution in the control population. That is to say, each year's births should be weighted by the representation of that cohort among your schizophrenics. Otherwise the discrepancy between seasonality of births among your schizophrenic patients may simply reflect the age distribution of your patient populations.

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We do not at the present time have any papers in preparation in this field,
but will be glad to see that you receive copies of anything we do publish.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

sending #141 Bolmer/TL
separately